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A Rare Case of Large Hepatic Hydatid Cyst in Pregnancy

Dr. Vrushali Patil[1], Dr. Chinmai B[2], Dr. Padmaja Samant[3], Dr. Pravin Shinde[4]

Seth G. S. Medical College and Kem Hospital, Mumbai, Maharashtra, India

Abstract: ***Human hydatidosis is a parasitic infection caused by the larval stages of Echinococcus (E.). This condition is rare in pregnancy, with an incidence of 1 in 20, 000 to 30, 000 pregnancies (1). In many cases, Echinococcus infections are asymptomatic for years, with symptoms only appearing once the cysts grow to a large enough size. There is no established consensus on how to manage these infections during pregnancy. We present a case of a large hepatic hydatid cyst diagnosed during the early second trimester and discuss the management for such a pregnancy.***

Keywords: Pregnancy, PAIR, Albendazole, Pigtail, Hydatidosis

1. Introduction

Hydatid cyst, or hydatidosis, is a zoonotic disease found globally, especially in regions where livestock farming, such as cattle rearing, is common. The most frequent form of the disease is caused by *Echinococcus granulosus*, which leads to cystic echinococcosis. *Echinococcus multilocularis* causes alveolar echinococcosis, which is becoming more widespread. The *E. granulosus* life cycle alternates between carnivorous hosts like dogs and herbivores such as sheep, with humans acting as accidental intermediate hosts. The liver is the primary site of infection, with most cysts found in the right lobe. However, cysts can also spread to other areas of the body, including the lungs, peritoneum, kidneys, brain, heart, mediastinum, bones, and more (**2).** In adults, the liver is most often affected (about 60%), followed by the lungs (20 - 30%).

2. Case Presentation

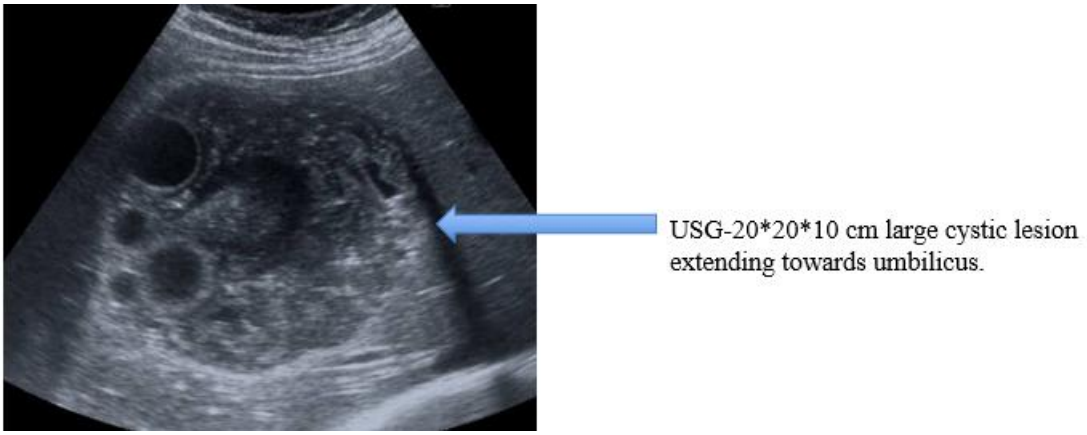
A 29 year old Gravida 2 Abortion 1 with 22 weeks period of gestation presented to the casualty with complaints of pain in abdomen since 2 days which was predominantly in right hypochondriac region, associated with nausea and vomiting. Patient also complained of respiratory discomfort on supine position. On examination abdomen was distended. There was tenderness in the right upper quadrant. There was cystic swelling in the right hypochondriac region, palpable up to the umbilical region measuring approximately **20cm x 20cm.** No other organs palpable.

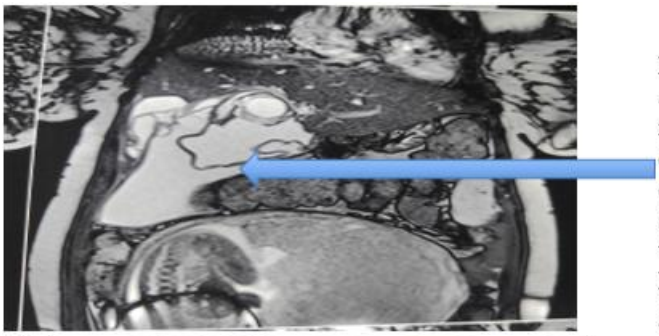
Complete blood count - Hemoglobin - 10.5gm%, WBC - 20, 000, Platelet count - 1.2 Lakh.

Liver function test - Total Bilirubin - 1.4mg/dl, D. Bilirubin - 0.5mg/dl, Alkaline phosphatase - 200IU/L. Ultrasound abdomen and pelvis showed 20cm x 20cm x 10cm large cystic lesion in the right lobe of liver with single live intrauterine gestation corresponding to 18 weeks and 5days. MRI abdomen and pelvis revealed exophytic cystic lesion arising from right lobe of liver with membranes and septae suggestive of hydatid cyst with approximate volume of 2500ml.

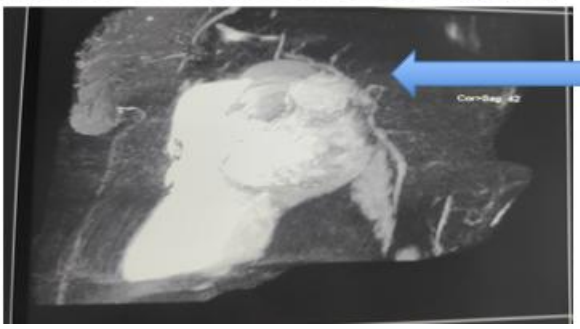
USG guided transhepatic pigtailing of liver HYDATID cyst done. Injection Hydroxyprogesterone caproate given. In view of bilious output in pig tail, Magnetic resonance cholangiopancreatography was done, suggestive of Hydatid cyst of right lobe of liver of about 500 cc communicating with medial sectoral duct draining segment 4a of liver. Planned for Endoscopic retrograde cholangiopancreatography guided stenting for communication of hydatid cyst with biliary duct with due risk of radiation exposure. Patient and relatives gave negative consent for the procedure and procedure was abandoned.

Tab Albendazole 10 - 15 mg/kg (400mg BD) given for 28 days. Pig tail drain output monitored and continued antenatal care.





MRI - Exophytic cystic lesion 13.9*17.5*20 cm arising from Right lobe of liver with septal and membranes suggestive of HYDATID cyst 2500 cc. There is extrinsic compression and splaying of Right hepatic duct and dilatation of Right system. No obvious communication with biliary tree.
Enlarged uterus with single intrauterine gestation.



MRCP -Hydatid cyst of right lobe of liver 500 cc, communicating with medial sectoral duct draining segment 4a of liver.

Patient followed on OPD basis with USG for residual volume of cyst.

Patient planned for induction of labour at 39 weeks in view of Gestational diabetes mellitus on Tab Metformin. Emergency lower segment cesarean section done in view of thick meconium stained liquor. Patient withstood procedure and anesthesia well.

Planned for definitive surgical management of the hydatid cyst 3 months post delivery.

3. Discussion

Although rare, hepatic hydatid disease could occur in pregnancy especially in endemic area. Diagnosis of hydatid disease in pregnancy requires high clinical awareness.

The diagnosis of hydatid cyst during pregnancy is usually challenging. It is confirmed by imaging mainly ultrasound and MRI. Serological tests such as indirect hemagglutination test (IHA) and enzyme - linked immunosorbent assay (ELISA) can be done but are less reliable during pregnancy owing to immunological changes.

Through hydatidosis seldom occurs in pregnancy, once established it rapidly increase in size in pregnancy due to decrease in the cellular immunity during and placental secretion of corticosteroids. This increases the chances of rupture of cyst which may lead to Anaphylactic shock. Also, hydatidosis increases the chances of preterm labour and preterm premature rupture of membranes. Large pelvic and liver hydatid cyst can lead to nonprogress of labour and obstructed labour **(3)** (**5**), shoulder dystocia and uterine rupture increasing maternal and perinatal morbidity and mortality. The rise in intraabdominal pressure during valsalva maneuver increases the chances of cyst rupture.

Anesthetic agents that cause significant hemodynamic instability, hypotension or excessive positive pressure ventilation increase the risk of cyst rupture. Epidural or spinal anaesthesia may be used in combination with general anesthesia for better pain control.

For asymptomatic small and calcified hydatid cyst discovered incidentally during pregnancy, observations and close follow up is advised. Pigtailing is a minimally invasive procedure used to manage hepatic hydatid cysts. It involves inserting a pigtail catheter into the cyst to drain fluid, often under ultrasound or CT guidance. The procedure is typically combined with scolicidal agents to kill remaining parasites named as PAIR technique (Puncture, Aspiration, Injection of scolicidal agent, and Reaspiration), (**4**) Albendazole, an anthelmintic, is effective but contraindicated in early pregnancy due to teratogenic effects. It is often used adjunctively to prevent recurrence after surgery or aspiration (**5**). Surgery, the gold standard treatment for hepatic hydatid cysts, is more complicated during pregnancy due to risks of abortion or preterm labor. Conservative options like cyst evacuation or radical surgery (peri - cystectomy, rarely hepatic resection) are considered. The second trimester is the safest for surgery, as the risk of complications is lower. Recurrence may occur due to ineffective treatment or reduced immunity during pregnancy.

4. Conclusion

Hepatic hydatid cysts in pregnancy, though rare, present significant challenges due to risks of cyst rupture, preterm labour, and anesthesia complications. Management includes close observation, PAIR technique, Albendazole (when safe), and surgical intervention. The second trimester is ideal for surgery, as it carries lower risks. With proper monitoring and treatment, including post - delivery surgical management, favorable outcomes can be achieved for both mother and baby.

Declaration
Conflict of interest: None
Disclosure: None
Informed consent: Informed consent was taken from patient.

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